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## How Many Farms . . . How Big?

THE NUMBER of farms in this country has changed only slightly in recent decades but striking changes have occurred in farm sizes. As a result of mechanization and a wide variety of technological developments, commercial farms have been getting larger and fewer. At the same time, the growing importance of rural living and part-time farming has increased the number of small, part-time, and residential units.

Census figures show that in 1945, large-scale farms—businesses usually large enough to be operated chiefly by hired labor—made up less than 2 percent of our farms and less than 4 percent of the farm people lived on them. At the other end of the scale, 26 percent of our farm population lived on 1½ million small units—mostly part-time and residential—which contributed about 3 percent of the total value of all farm production. In addition, there were nearly a million small scale farms which contributed little to commercial agricultural production.

The commercial family farm remains the chief unit in our agricultural economy. In 1945, they made up more

than half of our farms, produced 70 percent of the total value of products and provided homes for over 58 percent of our farm population.

The trends in numbers and sizes of farms emphasize three questions important in agriculture: How many farms should we have? How big should they be? How many people should try to earn their living on them? In the past, we have been handicapped by lack of adequate information on the numbers and sizes of our farms. Without such information, it was difficult to compare different sizes of farms or determine the kind of a living their operators could make from them.

This gap has been partly bridged by a new economic classification of farms developed by the Bureau of the Census and the Bureau of Agricultural Economics. It groups farms largely according to the gross value of their products (see tables 1 and 2). So far we have figures for 1945 only. But they provide for the first time considerable information on broad classes of farms that are similar in size and other characteristics.

The new classification separates full-time farms from part-time and residential units that are primarily places to live though some farm production is carried on. This is particularly helpful. Most farmers do not think of the smaller units as farms when they are talking about agricultural problems. Yet they make up more than one-fourth of the farms counted by the census. Our over-all statistics on income and other characteristics of farms include these units. By grouping them separately, we are able to get a better statistical picture of our full-time farms.

### Wide Range

These full-time farms, called "farming units" in the tables, range from large-scale enterprises producing more than \$20,000 worth of commodities, through large, medium, and small family farms to "small scale units." The latter group includes units with a value of production from \$500 to \$1,200 if the farm operator worked less than 100 days a year off the farm. Broadly speaking, therefore, most of these "farming units" provide the major source of living for the farm family.

The new classification of farms provides facts that help us in studying

the question of how many people should try to make their living in agriculture. However, the conclusions you will draw also will depend on what you think of farming as a way of life.

The authors believe that living in the open country has potential advantages over urban living; that rural living tends to promote a more stable society and a more effective functioning of democracy. To realize these advantages, economic conditions on farms must be comparable to those in the cities. We do not believe that a family must obtain all of its income from farm production in order to have them. These advantages can be obtained about as well on part-time farms and rural homes as on full-time farms. From this point of view, the trend toward part-time farming and homes in the country is a healthy development. However, it should not be thought of as a remedy for unemployment problems during periods of depression.

### All Sizes Needed

One answer to the question of how many people should try to make most of their living from farming would be: As many as are likely to find their best economic opportunity in agriculture.

Table 1.—Economic Classes of Farms

Economic class <sup>1</sup>	Number of farms	Farm population	Farm acreage	Gross value of farm production
Farming units:				
Large-scale farms.....	1.7	3.7	25.8	21.9
Large family farms.....	7.0	8.5	18.3	23.5
Medium family farms.....	20.0	21.3	24.1	30.0
Small-scale farms.....	15.8	14.0	5.8	4.2
Part-time and residential:				
Part-time farms.....	10.3	10.9	2.3	1.9
Nominal units.....	16.8	13.1	5.6	1.4
Total.....	100.0	100.0	100.0	100.0

<sup>1</sup> Master Sample, U. S. Census of Agriculture, 1945. Large-scale farms with value of production of \$20,000 and over; large family farms, \$8,000 to \$19,999; medium family farms, \$3,000 to \$7,999; small family farms, \$1,200 to \$2,999; small holdings, \$500 to \$1,200; part-time farms, \$250 to \$1,200 plus 100 days or more work off farms; nominal units, less than \$500 with some adjustments when income might be abnormal.

Table 2.—Economic Classes of Farms

Economic class <sup>1</sup>	Number of farms (1,000)	Average per farm				
		Gross value of product	All land	Harvested cropland	Value land and buildings	Value implements and machinery
<b>Farming units:</b>						
Large-scale units	102.1	\$39,203	2,905	384	\$78,422	\$6,452
Large family farms	408.9	10,484	514	193	26,067	3,021
Medium family farms	1,173.0	4,658	236	104	11,135	1,616
Small family farms	1,661.9	1,874	125	46	5,117	595
Small scale farms	923.5	825	72	22	2,305	204
<b>Part-time and residential:</b>						
Part-time farms	602.2	574	43	10	2,585	209
Nominal units	987.3	264	65	11	3,583	176

<sup>1</sup> Master sample, U. S. Census of Agriculture, 1945. Large-scale farms with value of production of \$20,000 and over; large family farms, \$8,000 to \$19,999; medium family farms, \$3,000 to \$7,999; small family farms, \$1,200 to \$2,999; small holdings, \$500 to \$1,200; part-time farms, \$250 to \$1,200 plus 100 days or more work off farm; nominal units, less than \$500 with some adjustments when income might be abnormal.

The people whose best economic opportunity is to be found in farming will vary a great deal in their native abilities and backgrounds. All sizes of farms—from large-scale farms down to the smallest units that will provide a living—will be needed to provide these opportunities. There also would need to be opportunities for a group of hired farm workers.

The tendency toward larger farms over the last quarter century has alarmed many people. They are asking whether family farms of varying sizes can compete with large scale operations unless special legislation or other aid is provided.

### Family Farm Can Compete

The desirability of the family farm, however, depends on whether opportunities to earn a satisfactory living actually are to be found on the smaller farms. The goal is pointless if family farms are unable to compete successfully with large-scale farms, or if small-scale farms merely mean poverty to their operators.

Available evidence indicates that the medium and large commercial family farm are competing successfully with

larger units. These farms also are getting larger, at least in some areas. The equipment and techniques available and the type of farming followed tend to set the lower limits on the size of farm that can be operated with a minimum technical efficiency. If a family farm is big enough to achieve such a standard of efficiency, it can pay operating expenses and maintain the farm plant and at the same time provide an adequate living for the farm family.

### Small Farm a Problem

It is the nearly one million "small scale farms" that provide the toughest problem. The annual value of the products of these farms is from \$500 to \$1,200. We do not know how many of these families have income from other sources such as investments and work off the farm by other members of the family. But even if we could exclude those who had income from other sources, it is safe to assume that a large group of these farmers have extremely low income. These small scale farms tend to be concentrated in areas such as the Southern Appalachians and the cut over areas of the Lake States.

In considering the problem of the small scale unit as an employment opportunity in agriculture, we must ask this question: If these farms are not large enough to produce large incomes, do they provide some of the farm families with a better income and greater satisfaction than they could get as hired laborers, either on or off the farm?

#### Few Conveniences

This poses a further question: What constitutes "adequate living" and can the smaller farms provide it? If it includes automobiles, electricity, running water and telephones most families on these farms did not have these conveniences at the time of the 1945 census. Most of these farms did not produce enough to offer the farm families these conveniences. Research, extension and other agricultural programs need to emphasize increasing the income opportunities of these families. Training for those whose best income opportunities lie outside of agriculture and assistance in developing more profitable farms represent two important elements of such programs.

In many respects the small-scale farm is our most difficult present-day farm problem. Conditions on these farms and on many of the small family farms need a good deal more study before we can determine the number of such units that are desirable in our agricultural economy.

#### Room for All Sizes

American agriculture can continue to provide opportunities for a wide range of talents. There is room for both large farms and small farms for those to whom one or the other represents the best income opportunity. Agricultural policy and programs can help provide a favorable economic environment for the maintenance of the family farm as the chief business unit in American agriculture. Encouragement also can be given to part-time farming and homes in the country for those who earn most of their living in other occupations.

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## Expect Little Change in Cattle Feeding

THE NUMBER of cattle to be fed this year is expected to be about the same, or slightly larger than last year while the number of sheep and lambs to be fed for the winter and spring market probably will be down from last year and possibly the lowest in over 20 years. These predictions are based on the situation to November 1.

Cattle feeding in the Corn Belt is expected to be about the same as last year though several of the States may have small decreases. Feeding activities in the Western States probably will be somewhat larger, chiefly because a record number may be fed in California and the number fed in Colorado may equal last year's record. Through October, little or no wheat pasture was available.

The price of feeder cattle has been an important influence in the cautious attitude of cattle feeders. Although the seasonal decline in feeder prices this fall was somewhat greater than last year, the average price for October was

the highest on record. It exceeded the average of last year by more than \$3 per hundred pounds.

Lamb feeding in the Corn Belt States and in some of the important western irrigated areas is expected to be down sharply from last year. Lack of surface moisture in the Great Plains prevented development of suitable fall sown wheat pastures. About 325,000 lambs have been moved into western Kansas. There is evidence of considerable shifting of lambs by feeders attempting to locate suitable wheat pasture.

The relatively heavy slaughter of lambs in August-October further reduced the number available for feeding. In addition, the lamb crop in the 13 western sheep States was 9 percent smaller than last year.

At the end of October, the price of feeder lambs on the Denver market was about \$22.80 compared with \$23.30 a month earlier and \$22.60 a year earlier.

# Individuals Own 87 Percent Of Farm Land, Survey Shows

**A**BOUT 87 percent of all farm land covered by the 1945 Census of Agriculture was held by individuals, according to a Nation-wide survey made in 1946. The remaining 13 percent of the farm acreage was owned by corporations, partnerships or public agencies.

The information provided by the survey is based on replies from 49,000 persons owning farm land. It showed that 82 percent of these owners held *full ownership* of their land. This means that either one person, or a man and wife, held basic ownership rights to the property. The property may be mortgaged without affecting these rights. This type of ownership is usually referred to by lawyers as "fee simple."

About 5 percent of individual owners held their land under a *purchase contract*. In this case, two or more persons other than husband and wife have ownership rights in the same property. This often occurs as the result of an inheritance.

Farm land was held as a *life estate* by 3 percent. The holder of a life estate has complete freedom in the use of the property except that he may not sell or otherwise transfer any part of it. This type of holding frequently results from a family agreement which provides that the wife have use of the property during her lifetime, in case she survives her husband. After her death the property goes to the children.

## Own 994 Million Acres

The remaining 6 percent of the 49,000 owners covered in the survey held their land under a combination of two or more of the above types of ownership.

The survey indicated that 994 million acres of land was held by individuals. Seventy-eight percent of the acreage was held under full ownership, 13.5 percent as undivided interests, 5.5 percent under purchase contract and 3 percent as life estates.

The 82 percent of the persons who had full ownership of farm land also owned more than three-fourths of 994 million acres held by individuals. In the Northeast region, 87 percent of the owners held 83 percent of the land under full ownership. In contrast, the percentages for the West were 76 percent of the owners and 75 percent of the land. Percentages in the North Central region were nearly as large as those in the Northeast while those in the South were similar to the West.

## Purchase Contracts

The percent of owners and the percent of acreage held under purchase contract was the same in every region except the Northeast where the proportion of acres held was slightly higher. Purchase contracts were of unusual importance in the West where 9 percent of the farm land was held in this manner. This was over twice the percentage held in the South and a third larger than in the Northeast and North Central regions.

On the basis of acreage, undivided interest in farm land ranged from 16 percent in the South and 15 percent in the West down to 9 percent in the Northeast and North Central regions. The percent of individuals in all regions who had undivided interests was about the same as the national average of 4.4 percent. For other types of ownership, the percent of owners and the acreage held was nearly equal in every region.

The 3 percent of the owners who held life estates and the 4 percent of the acreage held in that way in the South were the largest proportions of any regions. Life estates were only of slight importance in the Northeast and West, but more important in the North Central.

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# ECA and the FARM OUTLOOK

*Condensed from a talk by D. A. FitzGerald, director, Food and Agriculture Division, Economic Cooperation Administration, at the Agricultural Outlook Conference, Washington, D. C.*

**E**CA is primarily a banking agency. Its basic function is to help finance essential imports into western European participating countries to make up current deficits in their balance of trade to the extent that it is necessary and that funds authorized by Congress permit.

Before World War I, the value of United States imports was larger than the value of our exports. That situation changed after the Armistice and during the years between World War I and World War II, the United States began to have what is misleadingly called a "favorable balance of trade." We exported more than we imported. During 1946-47, our exports exceeded our imports by \$7,350,000,000; and in 1947-48, by \$7,750,000,000.

## Excess Is Financed

The excess in the value of exports over imports during 1946-47 and 1947-48, was financed in a variety of ways: by further drawing upon credits that importing countries had in the United States; by shipments of gold to the United States, and by loans and grants made by the United States.

By the summer of 1947, it was apparent that the inability of European countries to expand their exports to pay for their imports was not likely to be corrected in the near future. It was because of this that Secretary of State Marshall made the comments he did at Harvard in June 1947. On April 3, 1948, Congress passed the basic European recovery legislation. The first appropriation—about 5 billion dollars—was made the next month.

It often has been assumed that the appropriation made for the European Recovery Program represents an additional demand over and above the demands of the last 2 years. In fact, however, the 5 billion dollars appropriated for 1948-49 is considerably less than the 7 to 8 billion dollars worth of purchases in excess of current earnings

made by participating countries in the previous 2 years. Consequently, foreign demand for American exports in 1948-49 probably will be less than either 1946-47 or 1947-48 unless these countries are able to increase shipments to the United States or get additional dollars in other ways such as from tourists.

Foreign demand in 1949-50 will depend, of course, in considerable part on the appropriation that Congress may make for European recovery. It also will depend on the ability of foreign nations, particularly those of western Europe, to earn more dollars. There are very few countries that do not have to limit the dollars that their nationals or their governments may spend.

## Cuts Buying of Surpluses

While lack of dollars abroad does not affect demand for all agricultural commodities, its effect is much more general than perhaps we commonly realize. Limited buying of many of our so-called surplus commodities, such as tobacco and fruits, results primarily from the inability to find enough dollar exchange.

For some other American farm products, dollar exchange is being made available in amounts substantially adequate to take up a major portion of our exportable supplies. At the head of the list is bread grains—primarily wheat. Ever since the war, most European countries have had a bread ration. They place an increase in the ration, or its elimination, very near the top priority for dollars. In 1947-48, the United States exported to all destinations some 480 million bushels of wheat. The demand for 1948-49 is for approximately the same volume.

Reports indicate that for the participating countries as a group, bread-grain production this year was about 23 metric tons compared with 21 million last year and nearly 35 million tons prewar. We must remember,

however, that there are about 25 million more people in western Europe than in 1935-39. Furthermore, western Europe imported about one-third of all the food it consumed before the war.

This year, the European planted acreage was about 10 percent below prewar. But yields were up to prewar levels. Whether we can expect equally good weather next year, is, of course, in the lap of the gods. But in my opinion, it will take better than average weather next year to obtain prewar yields. Western European agriculture is still short of fertilizer and other production supplies. The best guess is that production of bread grains in 1949 still will be somewhat less than prewar. In this event, imports in 1949-50 are likely to be no less than in 1948-49.

## Two Qualifications

There are two major qualifications to this wheat outlook. We have to ask ourselves what exports can be expected from the U. S. S. R. Last year, Russia exported around 340,000 long tons of bread grains to western Europe. Our impression is that Russian crops this year are better than last. Exports could be larger but whether they will be I don't know.

The other qualification is the 1949 production in Canada, Australia, and Argentina. Production in Argentina has been decreasing and I see no reason for expecting a material change. Australia's crop is likely to be below the 1947 record. Canada's crop was larger than in 1947 but not up to the 10-year average. All in all, prospects appear to be good for at least another year of relatively high demand for American wheat.

Next to bread grains, feed grains are in greatest demand in western Europe. European production of livestock products is probably only 70 to 75 percent of prewar. Western Europe is desperately anxious to get feed grains and protein feeds in order to rehabilitate its livestock enterprise. In my opinion, exports of coarse grain foods this year and next will be much larger than the prewar average.

I think the basic commodity in shortest supply today is fats and oils.

European production before the war was nearly 3 million metric tons. This year it will be about 2.3 millions. Before the war, western Europe imported nearly 3 million metric tons; this year this area hopes to have a net import of about 2 million tons. There is every reason to expect import requirements to be as large in 1949-50 as in 1948-49. That suggests the importance of a large acreage of oilseed, particularly edible oilseed crops.

The higher cost foods, particularly meat and dairy products, take a somewhat lower priority in western Europe. There will be little demand, if any, for meat from the United States next year. If supplies permit, there will be some requirements for dairy products, particularly dry skim milk and evaporated milk and cheese. At present, there is not enough dry skim milk produced to meet export requirements. As a result, ECA is not financing exports of this product.

Demand for beans and peas appears likely to be somewhat less than this year's production. It might be that for these crops farmers should consider going a little slow on production.

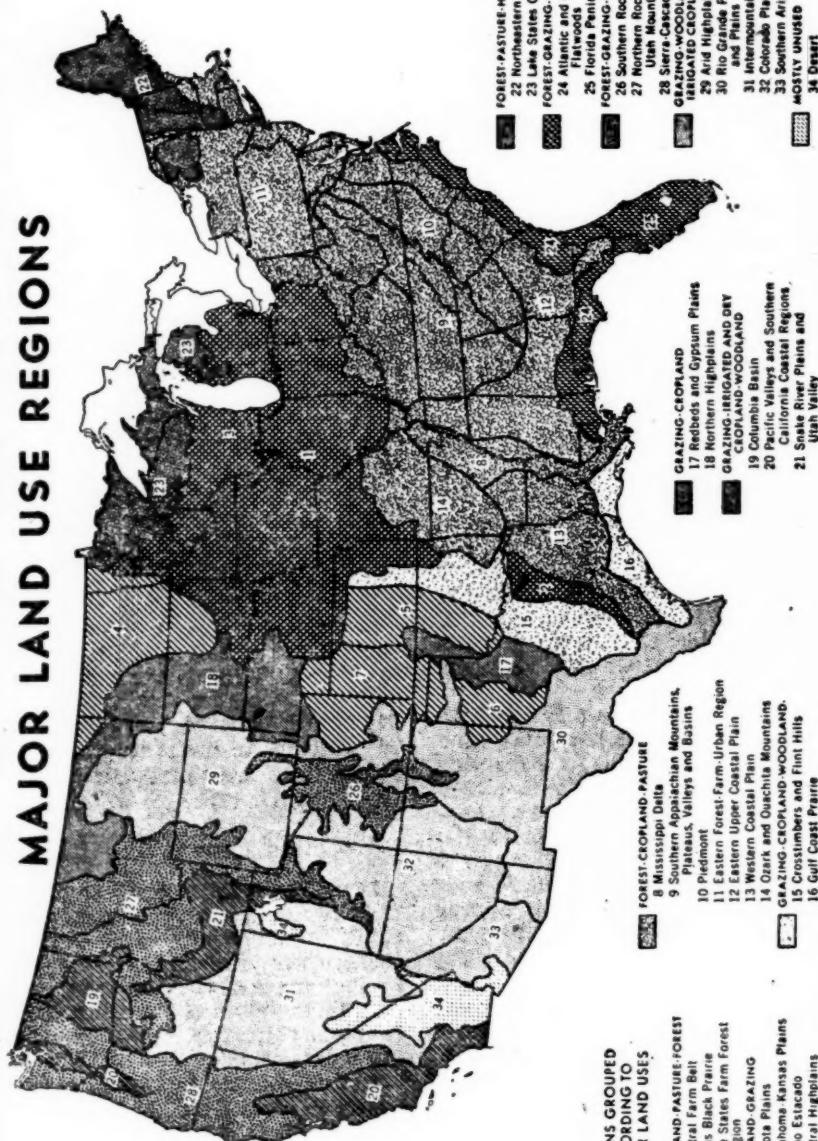
Tobacco exports from the United States this year may be no more than two-thirds those of 1947 though equal to prewar. What is worrying tobacco growers is whether they will continue downward; whether western Europe will attempt to divert its tobacco demands into new production or into types grown in other parts of the world.

## Cotton Exports May Rise

It is difficult to answer that question. If European recovery is successful, I think requirements for American tobacco will gradually increase. But in the long run, such an increase can only be maintained if western Europe is able to earn more dollars by increasing its exports.

Cotton exports last year were the lowest in some time. Western Europe generally is fairly short of cotton and is requesting substantial ECA financing for this product. As a result, I expect cotton exports to be somewhat larger than last year. It must be remembered, however, that western Europe will try to buy as much as possible from nondollar areas.

# MAJOR LAND USE REGIONS



# Land Use Changes Lack Drama of Early Days but Still Important

LAND USE is at the bottom of a good many topics that make the headlines these days—land policy, land reclamation, land conservation, future need of agricultural and forest products, to underscore only a few. All are related and all stem from and revert back to the use of the land, our primary natural resource base.

Many factors that have national and international implications affect the use of the land. Science and technology have complicated the relationship of man to the land. Land use, therefore, is a many-sided subject whose treatment depends on the particular angle from which it is considered.

Adjustments in the use of the land to the needs of the time and the potentiality of the land itself is a dynamic process which has been going on ever since the colonists settled on the Atlantic shore. Expansion in the higher use of the land in one direction frequently has been accompanied by contraction in another.

Shifts in major land uses have become a never-ending process. These shifts lack the dramatic appeal of the expansion movement of our early national history when settlers were pushing back the western frontiers. The frontiers have disappeared. Nevertheless, changes from one major use of the land to another do take place. Woodland is cleared and used for crops or pasture in one place, while cropland reverts to pasture or forest in another.

## Changes Affect Economy

These shifts may be part of a rotation system in the use of the land. They also occur in response to natural causes, individual or community enterprise, or national needs. Changes of this sort may be comparatively small on a farm or in a locality. In total, however, they are sufficiently important to affect the economy of regions and the Nation as a whole.

Major uses of the land—cropland, grazing, and forest—now have a regional aspect. Land relief, climate and soil have produced innumerable gradations in the suitability of the land for the major uses. Over large areas, one of these factors may impose definite limits on one or the other of the major land uses, or in the severest cases, may prevent use of the land for agriculture. Within these limits land use is likely to be influenced considerably by the social-economic conditions of the area. This includes ways of using land inherited from past generations.

## Regions Differ Widely

The major land use regions in the United States are shown on the accompanying map. Some of them are as far apart as the poles. There are desert regions, like region 34, which furnish practically no agricultural or forest products. And there are regions, such as 1, 2, and 3, where one-half to three-fourths of the land area is used annually for crops. Pasture and some woodland, aside from urban and service areas, account for the rest of the total. The proportions of cropland proportions are similar in regions 4, 5, 6, and 7 but the remainder is almost entirely in pasture.

Between these extremes there are all kinds of variations. In regions 8, 9, 10, 11, 12, 13, and 14 of the forest-cropland-pasture association, about one-third of the land is in crops and the major proportion in forest. Cropland, moreover, is often irregularly distributed. Much of the area consists of mountainous forest land with cropland concentrated in the valleys and basins. Urban-industrial development is prominent in the northern regions.

The proportion of cropland is even less in the forest-pasture-hayland and the forest-grazing-cropland associations, regions 22, 23, 24, and 25. Forest is the predominant land use in these regions, while cropland varies

from somewhat less to somewhat more than 10 percent of the area.

Land use in open land in the regions of the grazing-cropland-woodland combination is predominantly grazing but from 35-40 percent of the total acreage is used for crops. In the mountain forests of the West, regions 26, 27, and 28, cropland is less than 5 percent. Much more significant is the proportion of cropland in the greatly diversified land use combinations of the Pacific valleys and plateaus, regions 19, 20, and 21. Here irrigated and dryland farming is rather extensive. In contrast, in the arid regions 29, 30, 31, 32, and 33, cropland is only about 2 percent of the total and is confined almost exclusively to irrigated land. The rest is in range land.

Extent of fluctuations or shifts in the relative proportions of land used

for crops, grazing and forest, also differ by regions. Cropland acreage is most vulnerable to climatic and market influences in fringe regions such as 6, 7, 17, and 18.

Possibilities for expansion of the national agricultural plant are largely confined to regions in which some kind of reclamation—irrigation, drainage and clearing—is feasible.

The accompanying map of major land use regions is based on a more comprehensive treatment of land use on a large scale map which is now being prepared. Land use surveys, aerial photographs and statistics are the source material on which it is based.

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## *Lost: 6 Million Days in 4 Months*

FIVE persons were reported injured during the first 4 months of 1948 for every 100 farms included in a sample survey made by the Bureau of Agricultural Economics. The survey included interviews with about 12,000 farmers in 871 countries, selected to be representative of the entire Nation.

From the survey, it is estimated that for the whole Nation farm people and farm workers had approximately 275,000 lost-time accidents during the 4 months, and lost 6 million days or more from regular activities. No allowance was made for time lost by persons who were fatally injured or permanently and totally disabled. Average time lost per accident reported was about 22 days.

Medical, dental, and hospital expenses which resulted from these accidents averaged just over \$40 per person injured, or about \$52 per person if accidents involving no such costs are excluded. The total bill for medical, dental, and hospital care of injured persons was estimated at more than 11 million dollars.

Twice as many farm people were injured in falls as in any other type of accident. Falls on ice were most numerous but other falls led to many serious injuries. The next most common type of accident involved animals.

Horses and mules were responsible for half, and cattle other than bulls for a third. Very few accidents involving bulls were reported.

Third in importance were accidents due to motor vehicles which accounted for one out of every nine. Passenger cars were responsible for 70 percent and trucks for more than 25 percent of such accidents. Accidents due to machines were fourth most common making up about 10 percent of the total. Tractors accounted for 30 percent of the machine accidents. Among hand tools, axes caused more lost-time accidents than any other tool. Injuries that resulted from handling of heavy objects, stepping on or striking against sharp objects, and being in the way of falling trees and lumber made up 13 percent of all accidents. Some 10 percent of all accidents were not sufficiently described to be classified into any one of the nine major types.

Accidents to men and boys were about 3½ times more numerous than accidents to women and girls in all age groups. About 49 percent of all accidents were the result of farm work. Five percent of the accidents were associated with housework; 16 percent with recreational activities and 30 percent with some other activity.

# Outlook Highlights

.... December 1948 ..

## Food Supply Unchanged

Americans probably will eat about as much food per person in 1949 as this year when consumption is averaging 12 percent above prewar. Retail food prices this year average about 10 percent above 1947 and are expected to continue high through most of 1949.

In late fall and early winter, less beef and veal, chicken, turkey, apples, pears, sweetpotatoes, dry peas, and fluid milk and cream will be marketed than in 1947. On the other hand, there will be more manufactured dairy products, vegetable oil products, nuts, fresh vegetables, potatoes, dry edible beans, sugar, and syrup.

European food production is materially higher than in 1947 but is still below prewar in many areas. Stocks are very low and population greater. Total export demand for United States foods is not expected to decline much, if any, but less emphasis will be put on grains.

## Exports Increase

The United States exported 838 million dollars worth of farm products in July-September compared with 785 millions in the previous 3 months.

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since January-March 1947, it is still 9 percent below third quarter of last year.

Total agricultural exports for the year are expected to reach 3.4 billions compared with 3.9 billion dollars in 1947.

## Prices Still Below Last Year

The index of prices received by farmers fell 2 percent from mid-October to mid-November and at 271 percent of 1910-14 was still below a year earlier. Decline was chiefly due to lower prices for hogs, citrus fruits, corn, butterfat, tobacco, and cotton.

The index of prices paid by farmers including interest and taxes was off slightly from October to November. As a result the parity ratio declined 1 point to 110.

## Cotton Demand Moderate

Prices of cotton are slightly above loan levels. Buying by domestic mills and for export is largely confined to immediate needs. Domestic mills consumed slightly less cotton in August-October as a year earlier. Exports in August-September were up 120,000 bales from those 2 months of 1947.

Prices of cotton textiles have declined substantially in recent months and in mid-November were still under pressure.

## Potato Support Set at 60 Percent

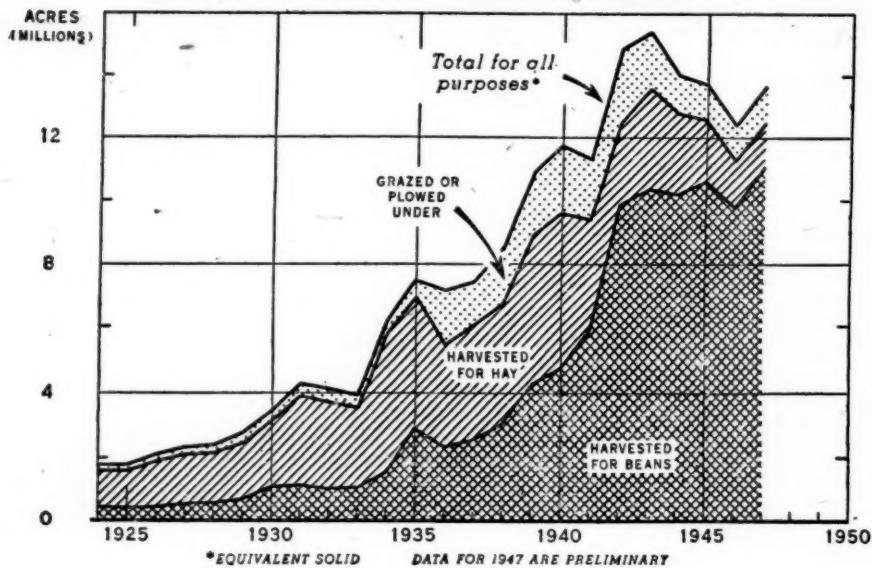
The 1949 potato crop will be supported at 60 percent of parity compared with 90 percent this year, the Department of Agriculture announced. The 1949 goal acreage is about one-tenth below that of this year. Crop in 1948 yielded 204.5 bushels per acre and was third largest on record.

## Higher Apple and Pear Prices

Smaller crops of apples and pears probably mean slightly higher prices this winter than last. With production of citrus fruits and grapes large, prices probably will be about as low as a year ago. Prices for record cranberry crop probably will continue much lower than in 1947.

(Continued on page 16)

SOYBEAN ACREAGE: TOTAL FOR ALL PURPOSES, HARVESTED FOR BEANS, HARVESTED FOR HAY, AND GRAZED OR PLOWED UNDER, UNITED STATES, 1924-47



U. S. DEPARTMENT OF AGRICULTURE

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## Once A Rare Plant, Soybeans Are Now the Leading Oil Crop

SOYBEANS have become one of the major crops in the United States within the last 20 years. The acreage grown for all purposes increased from less than  $2\frac{1}{2}$  million in 1928 to about  $13\frac{1}{2}$  million during the last 5 years. The acreage harvested for beans expanded from about half a million in 1928 to 11 million in 1947.

The dramatic expansion of soybeans during the last two decades is in sharp contrast with the early history of the crop in this country. Introduced into the United States from the Orient more than a century ago, soybeans were at first grown mainly at a few agricultural experiment stations and as a rare plant in a few private gardens.

Late in the nineteenth century the United States Department of Agriculture began to introduce a great many

varieties of soybeans from eastern Asia. This was accompanied by a program of selection and breeding by the Department and several of the State agricultural experiment stations. Production increased gradually but the total acreage was still relatively small in 1925.

Several developments in the 1920's stimulated more widespread interest in the crop. Better adapted varieties came into use, methods of growing and harvesting were improved, and a few plants for processing soybeans were established. Production rose steadily from 1925 to 1939 and provided the basis for the remarkable expansion of the first 4 years of World War II when acreage for beans rose to more than 3 times the prewar average (see chart).

In addition to being grown for beans, soybeans are grown for hay, for graz-

ing, and for green manure. For many years, the principal use of the crop in this country was for forage. However, with the adoption of improved varieties for bean production and with the development of markets for soybean products the proportion grown for beans steadily increased. Prior to 1930 the acreage harvested for beans was generally less than 25 percent of the acreage grown for all purposes; during the last 5 years the proportion has ranged from 73 to more than 80 percent.

About 80 percent of the soybean supply in recent years has been processed into oil and oil meal. Most of the remainder was used for seed, while a small proportion was fed to livestock. Direct consumption for human food is very small in this country. During recent years, 3 to 7 percent of the crop has been used in the manufacture of soya flour, mainly for export. Relatively small quantities of vegetable varieties of soybeans are grown in gardens for home use, or produced for specialized food industries.

### **Oil Used in Food**

Since 1943, soybeans have been the leading oil crop in the United States. In 1946-47, soybean oil accounted for 45 percent of our total domestic production of vegetable oils and 16 percent of our output of all fats and oils. About 80 to 90 percent of the soybean oil is used for food, principally in shortening, margarine, mayonnaise, and salad dressing. The remainder is used in industry, mainly in paints, varnish, and other drying oil products. Much progress has been made during the last decade in improving the oil, both for food and industrial uses. The American soybean processing industry increased its yearly capacity from about 130 million bushels in 1944 to about 200 million bushels in 1948.

More than 90 percent of the soybean oil meal produced is used for feed. Since 1942, soybean oil meal, including cake, has made up more than half of our total production of oilseed cake and meal. It is an excellent high protein feed for all classes of livestock and is especially valuable for poultry and

hogs. A relatively small percentage of the total is processed into low fat soya flour which is used in bakery goods, many premixed foods, and candy. Soybean oil meal also is used in numerous industrial products, such as adhesives, molding compounds, plastics, paper sizing, and foam solutions.

### **Rich in Protein**

On the average, the yield of a bushel of soybeans processed by an expeller press is about 9 pounds of oil and 48 pounds of meal. With the newer solvent process, about 10.5 pounds of oil and 45 pounds of meal are obtained. Variations from these averages may be considerable because of differences in variety and quality of the soybeans and in the efficiency of individual processing plants. Soybeans have a higher proportion of protein to oil than other major oil crops.

The price of soybeans for processing is determined mainly by the prices of oil and meal. In recent years, the value of the meal has been about as important in determining farmers' prices for soybeans as that of the oil.

Average yields of soybeans in the United States have almost doubled since the middle 1920's. One of the principal factors has been the development and use of better adapted high-yielding varieties. A given variety of soybeans is usually well adapted to a rather limited area. Some of the outstanding varieties developed in recent years are the Lincoln and Hawkeye for the Corn Belt and the Ogden, Roanoke, and Volstate for the South.

### **Combines Cut Losses**

Improved methods of growing and harvesting also have raised yields. These include more timely operations, row planting, and more effective weed control. But most important has been the adoption of the combine which is now used to harvest the great bulk of the commercial crop. Harvesting losses with combines, under average conditions, usually run less than 10 percent compared with losses up to 30 percent or more with some of the older harvesting methods.

Soybeans are grown almost exclusively in the eastern half of the United States. Commercial production is concentrated in the north central region, the Mississippi Delta, and the middle Atlantic coast.

### Corn Belt Leads

The north central region, which includes the Corn Belt, supplied 91 percent of the total United States production of soybeans in 1947, compared with 57 percent in 1924. Yields are higher in the Corn Belt than in any other large area.

Cropland for the expanding acreage of soybeans in the north central region came mostly out of corn, small grains, hay, and rotation pasture. During the

1930's, some land previously used for corn was shifted to soybeans, but during World War II acreage of both crops increased.

### Strong Demand for 1949

The outlook at present indicates a continued strong demand for soybeans for at least another year. World supplies of fats and oils are still relatively low. In the long run the demand for soybeans will continue to depend on the market situation for soybean oil and oil meal, and this, in turn, will depend on the level of consumer purchasing power and on available supplies of competing fats and oils and high protein feeds.

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## Prices of Farm Products

[Estimates of average prices received by farmers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and State]

Commodity	5 year average		Nov. 15, 1947	Oct. 15, 1948	Nov. 15, 1948	Parity price, Nov. 15, 1948
	August 1909-July 1914	January 1935-December 1939				
Wheat (bushel).....	do.....	0.884	0.837	2.74	1.98	2.04
Rye (bushel).....	do.....	.720	.554	2.49	1.43	1.51
Rice (bushel).....	do.....	.813	.742	*2.77	2.07	2.33
Corn (bushel).....	do.....	.642	.601	2.19	1.38	1.21
Oats (bushel).....	do.....	.399	.340	1.09	.699	.756
Barley (bushel).....	do.....	.619	.533	1.87	1.10	1.15
Sorghum grain (100 pounds).....	do.....	1.21	1.17	3.29	1.99	2.14
Hay (ton).....	do.....	11.87	8.87	17.30	18.40	18.40
Cotton (pound).....	cents.....	12.4	10.34	31.87	31.07	30.52
Cottonseed (ton).....	dollars.....	22.55	27.52	80.10	63.70	69.00
Soybeans (bushel).....	do.....	1.96	.954	3.43	2.27	2.36
Peanuts (pound).....	cents.....	4.8	3.55	10.1	10.4	10.6
Flaxseed (bushel).....	dollars.....	1.69	1.69	6.48	5.74	5.74
Potatoes (bushel).....	do.....	1.697	.717	*1.64	1.42	1.44
Sweetpotatoes (bushel).....	do.....	.878	.807	1.05	2.07	1.98
Apples (bushel).....	do.....	.96	.90	*2.15	2.20	2.35
Oranges on tree (box).....	do.....	*2.29	1.11	.93	1.60	.66
Hogs (hundredweight).....	do.....	7.27	8.38	*24.30	24.60	21.80
Beef cattle (hundredweight).....	do.....	6.42	6.56	*18.20	22.10	21.40
Veal calves (hundredweight).....	do.....	6.75	7.80	*21.10	25.00	24.90
Lambs (hundredweight).....	do.....	5.88	7.79	20.80	22.10	22.00
Butterfat (pound).....	cents.....	26.3	29.1	*78.1	67.8	64.3
Milk, wholesale (100 pounds).....	dollars.....	1.60	1.81	*4.94	*4.91	4.90
Chickens (pound).....	cents.....	11.4	14.9	24.9	29.9	29.3
Eggs (dozen).....	do.....	21.5	21.7	53.4	54.7	58.3
Wool (pound).....	do.....	18.3	23.8	*41.9	46.1	45.5

<sup>1</sup> Comparable base price, August 1909-July 1914.

<sup>2</sup> Comparable price computed under the Steagall amendment.

<sup>3</sup> 1919-28 average of \$1.12 per bushel used in computing parity.

<sup>4</sup> Revised.

<sup>5</sup> 1919-28 average for computing parity price.

<sup>6</sup> Adjusted for seasonal variation.

# Economic Trends Affecting Agriculture

Year and month	Industrial production (1935-39 = 100) <sup>1</sup>	Income of industrial workers (1935-39 = 100) <sup>2</sup>	1910-14=100					Index of prices received by farmers (August 1909-July 1914=100)			
			Average earnings of factory workers	Wholesale prices of all commodities <sup>3</sup>	Prices paid by farmers		Farm wage rates <sup>4</sup>	Livestock and products			
					Commodities	Commodities, interest, and taxes		Dairy products	Poultry and eggs	Meat animals	All livestock
1910-14 average	58	50	100	100	100	100	100	100	101	101	101
1915-19 average	72	90	152	158	151	150	148	148	154	163	158
1920-24 average	75	122	221	160	161	173	178	159	163	123	142
1925-29 average	98	129	232	143	155	168	179	160	155	148	154
1930-34 average	74	78	179	107	122	135	115	105	94	85	93
1935-39 average	100	100	190	118	125	128	118	119	100	119	117
1940-44 average	192	238	325	139	150	147	212	162	146	171	164
1945 average	203	291	403	154	180	172	350	197	196	210	203
1946 average	170	275	391	177	202	193	278	242	198	256	240
1947 average	187	332	440	222	246	231	408	269	221	340	293
1947											
November	192	352	458	233	257	241	425	313	231	338	304
December	192	364	471	238	262	245	425	311	262	352	320
1948											
January	193	359	466	242	266	251	425	313	231	379	328
February	194	354	462	235	263	248	425	307	218	331	300
March	191	358	466	236	262	247	425	298	212	342	302
April	188	341	463	238	264	249	420	290	214	347	304
May	192	350	464	239	265	250	425	261	211	361	309
June	192	361	472	243	266	251	425	291	221	390	326
July	186	361	473	246	266	251	431	300	234	417	344
August	191	376	483	247	266	251	425	305	247	411	344
September	192	380	483	246	265	250	425	302	253	408	343
October	195	382	481	241	263	249	427	289	260	373	323
November								284	272	351	313

Year and month	Index of prices received by farmers (August 1909-July 1914=100)								All crops and livestock	Parity ratio <sup>5</sup>		
	Crops											
	Food grains	Feed grains and hay	To-bacco	Cotton	Oil-bearing crops	Fruit	Truck crops	All crops				
1910-14 average	100	101	102	96	98	99	-----	99	100	100		
1915-19 average	193	164	187	168	167	125	143	165	162	106		
1920-24 average	147	126	192	189	149	148	140	160	151	86		
1925-29 average	140	119	172	145	129	141	140	143	149	80		
1930-34 average	70	76	119	74	72	94	106	86	90	66		
1935-39 average	94	95	175	83	106	83	102	97	107	84		
1940-44 average	123	149	245	131	159	133	172	143	154	103		
1945 average	172	161	366	171	215	220	224	201	202	117		
1946 average	201	195	382	228	244	226	204	226	233	121		
1947 average	271	246	380	261	335	194	249	201	278	120		
1947												
November	312	283	354	257	349	151	272	268	287	119		
December	318	305	377	275	367	149	294	281	301	123		
1948												
January	322	318	377	267	377	135	320	284	307	122		
February	251	261	374	248	333	136	320	257	270	112		
March	260	284	372	256	339	140	295	262	283	115		
April	268	291	371	275	351	142	340	276	291	117		
May	261	282	370	284	357	141	262	267	289	116		
June	249	278	370	284	364	155	213	261	295	118		
July	240	256	370	266	366	172	213	253	301	120		
August	227	235	386	245	310	183	172	236	283	117		
September	223	223	406	250	282	185	150	231	290	116		
October	226	192	418	251	270	174	176	227	277	111		
November	234	181	412	246	283	157	186	224	271	110		

<sup>1</sup> Federal Reserve Board represents output of mining and manufacturing; monthly data adjusted for seasonal variation.

<sup>2</sup> Computed from data furnished by Bureau of Labor Statistics and Interstate Commerce Commission on pay rolls in mining, manufacturing, and transportation; monthly data adjusted for seasonal variation. Revised August 1948.

<sup>3</sup> Bureau of Labor Statistics.

<sup>4</sup> Monthly data adjusted for seasonal variation.

<sup>5</sup> Revised.

<sup>6</sup> Ratio of prices received to prices paid for commodities, interest, and taxes.

<sup>7</sup> 1924 only.

<sup>8</sup> Preliminary.

# Outlook Highlights

(Continued from page 11)

## Dairy Prices Strengthen

Farmers' prices for dairy products strengthened after the September to October drop, the sharpest ever recorded for the time of year. Downward drift began in late July after farmers' prices had reached a new high, allowing for seasonal adjustments. Since milk production usually declines in second half of year, prices usually rise during this period.

First significant decline among dairy products was made by butter, which was unusually high early in the summer. Margarine also dropped after a very sharp break in prices of cottonseed and soybean oils which reflected this year's large crops.

## Hog Marketings Heavy

Hog slaughter this fall has been larger and weights lower than is usual following a bumper corn harvest. Marketings will reach a seasonal peak late this year or early in 1949. But because of heavy slaughter to date peak may not be as high as usual. Hog prices in mid-November were lower than a month earlier.

## Wheat Prices Top Loan

Wheat prices have advanced fairly steadily this fall and in mid-November were slightly above loan levels. On August 2, prices at Kansas City were about 18 cents below the loan. Prices are expected to rise some in the next few months but large changes are unlikely.

Heavy exports are relieving the storage situation. From now on, sales below loan rate are likely to be confined to damaged wheat.

## Corn Below Loan Rate

A much greater than seasonal decline this fall brought corn prices down to an average of \$1.21 per bushel in mid-November, 23 cents below the national average loan rate and the lowest in nearly 2 years. Prices of most other feeds have advanced since early October.

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